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(54) Microwavable crispy bread-rolls

(57) A dough-composition, suitable for the preparation of a bread-roll, that is microwavable in a susceptor, comprises:

100% flour
2-10% yeast
0-4% salt
0-5% fat
0.1-20% bread-improver
0-5% sugar
0.05-2% monoglycerides with IV > 20
45-65% water

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Description

Many bread-dough compositions are known in the prior art. Conventional ingredients for these doughs are: flour, yeast, salt, fat, emulsifier, sugar and water, which can be present in various amounts, depending among other on the type of dough desired. Some of these known compositions are useful for the preparation of bread-rolls, other compositions are used for the preparation of microwavable bread. However none of the known compositions could be used for the preparation of a microwavable crispy bread roll with an improved soft crumb and still having a short bite after microwaving. We found a solution for above problem. So we found a dough-composition from which baked bread-rolls could be made, that upon freezing and reheating by microwaving displayed an excellent crispy character, a soft crumb and had a short bite.

Our dough-composition can be defined as a dough, suitable for the preparation of a bread-roll, that can be reheated in a susceptor by microwaving, which dough comprises:

100 wt % of a flour and on basis of this flour;
2-10 wt % of yeast;
0-4 wt % of salt;
0-5 wt % of fat;
0,1-20 wt %, preferably 0.2-3 wt % of bread - improver, preferably comprising emulsifier(s), anti-oxidants, enzymes, fats, etc.
0-5 wt %, preferably 0.1-2 wt % of a sugar
0.05-2 wt % of a monoglyceride-composition with an iodine value (IV) > 20
45-65 wt % of water

It was found, that the amount of unsaturates in the monoglycerides had an impact on the performance of the bread-rolls after microwaving so we prefer to apply monoglycerides, comprising so much of unsaturated fatty acid moieties, that its IV > 20, preferably > 30, most preferably > 40.

Although the use of mono- and diglycerides in shortenings is known from US 4,335,157 nothing can be derived from this document about the specific use of our unsaturated monoglycerides in doughs that need to be reheated by microwaving.

The amounts of yeast, fat and water that we preferably apply in our dough-compositions are:

3-8 wt % of yeast
0.5-3 wt % of fat
50-60 wt % of water.

Emulsifiers that can be applied advantageously in the bread improver component of our doughs are in particular selected from the group consisting of lecithin (both untreated and enzymically treated), sodium or calcium stearoyl lactylate (=SSL or CSL) and Data-esters (=diacetyl tartaric acid fatty acid esters). Anti-oxidants that are very suitable in our composition are e.g. ascorbic acid, ascorbic acid fatty acid esters, such as ascorbyl palmitate, while also KBr03 can be applied. Enzymes that can be present are preferably selected from the group consisting of glucose oxidase, glucose peroxidase, amylase, xylanase and lipoxy genase. Combinations of above ingredients can have synergistic effects on the dough compositions and are therefore very useful. The bread-improver component of our dough can also contain fillers, such as inorganic foodgrade filler materials.

The reheating of our bread rolls in a microwave oven is suitably performed by applying a susceptor around, our bread rolls. As susceptor any prior art susceptor suitable for this purpose could be applied. Examples of suitable susceptors are disclosed in: GB 2.280.342, EP 563.442 or GB 2.250.408.

The bread-rolls, suitable for reheating in a susceptor by microwaving, which are made by baking of a premoulded portion of a dough with the composition as mentioned are also part of the invention. Baking of the breadrolls can be performed in any conventional oven, using standard conditions.

Although it is possible to perform the reheating of our bread-rolls in the absence of a susceptor, in which case a combi-oven has to be applied, we found that in order to fulfil the aims of the invention the best it is most suitable, when the bread-rolls mentioned above are provided with a susceptor. Therefor microwavable bread-rolls, provided with a susceptor, suitable for the production of a crispy bread-roll with improved crumb-softening properties and with a short-bite, wherein the bread-roll is made of a dough with the composition according to the invention are also part of our invention.

According to a further embodiment of the invention the bread-rolls can be baked, frozen to -5 to -20°C, provided with a hole, which hole can be filled with a savoury or sweet filling, whereupon the filled bread-rolls are put into a susceptor and the composite of susceptor and bread-roll is stored at -5 to -20°C. It is however also possible to fill the bread-rolls without first freezing them.

According to a last embodiment the use of a dough for the production of a microwavable bread-roll, wherein a

bread-roll, made from a dough with the composition according to the invention is used for the improvement of the crumb-softening properties of the microwaved bread-roll and to obtain a short-bite for the microwaved bread-roll, is also part of our new invention.

Example:

1. A dough was made from the following ingredients in the amounts indicated:

flour: Edelweiss®	2000 g
Yeast	140 g
Salt	40 g
fat: Biskien®-zacht bread improver, comprising:	20 g
lecithin, xylanase, ascorbic acid and amylase	20 g
monoglyceride 2235 (Quest) IV=40	6 g
water	1120 g

The dough was prepared by mixing of all dry components and the water using a Diosna-mixer (3 min, low speed) Thereafter kneading was continued during 3.5 min at high speed.
The dough was held at 27°C for 12 min (45% rel hum.). The dough was fermented for 1.1 hrs at 30 °C (rel. hum 75 %)
60 g of the dough were moulded into a bread-roll. The bread-roll was baked (20 min. at 235°C), provided with a susceptor and the composite was frozen (to -10°C).
After storage for 14 days at -10°C the bread-roll in susceptor was put subjected to microwaving in a Brother-oven for 45 sec. at 1700 Watt.
The microwaved bread-roll was crispy and had a short-bite and an excellent crumb softness.

Example:

2. A dough was made from the following ingredients in the amounts indicated:

flour: Kolibri®	2000 g
Yeast	140 g
Salt	40 g
fat: Biskien zacht® bread improver, comprising:	20 g
lecithin, xylanase, ascorbic acid and amylase	20 g
monoglyceride 2235 (Quest) IV=40	6 g
water	1120 g

The dough was prepared by mixing of all dry components and the water using a Diosna-mixer (3 min, low speed) Thereafter kneading was continued during 6 min at high speed.
The dough was held at 27°C for 12 min (45% rel hum.).
The dough was fermented for 2 hrs at 30 °C (rel. hum 75 %)
60 g of the dough were moulded into a bread-roll. The bread-roll was baked (20 min. at 235°C), provided with a susceptor and the composite was frozen (to -10°C).
After storage for 14 days at -10°C the bread-roll in susceptor was put subjected to microwaving in a Brother-oven for 45 sec. at 1700 Watt or in a Whirlpool combi-oven 650 Watt and 175 °C - 200 °C without susceptor.

The microwaved bread-roll was crispy and had a short-bite and an excellent crumb softness.

Example

3 flour: Ibis®	2000 g
Yeast	80 g
Salt	40 g
fat: Biskien zacht® bread improver, comprising:	40 g
lecithin, xylanase, ascorbic acid and amylase	40 g
monoglyceride 2235 (Quest) IV=40	6 g
water	1260 g

Dough preparation, proofing etc. as described for example 1. Two products were reheated in the susceptor sleeve after 3 weeks storage in a Panasonic microwave oven at 650 W for 2'15".

Claims

1. Dough, suitable for the preparation of a bread-roll, that can be reheated in a susceptor by microwaving, which dough comprises:

   100 wt % of a flour and on basis of this flour;
   2-10 wt % of yeast;
   0-4 wt % of salt;
   0-5 wt % of fat;
   0,1-20 wt %, preferably 0.2-3 wt % of bread - improver, preferably comprising emulsifier(s), anti-oxidants, enzymes, fats
   0-5 wt %, preferably 0.1-2 wt % of a sugar
   0.05-2 wt % of a monoglyceride-composition with an iodine value > 20
   45-65 wt % of water

2. Dough according to claim 1, wherein the monglyceride-composition contains so much unsaturated fatty acid moieties, that its IV > 30, preferably > 40.

3. Dough according to claims 1 or 2, wherein the dough comprises: (on flour)

   3-8 wt % of yeast
   0.5-3 wt % of fat
   50-60 wt % of water.

4. Bread-roll, suitable for reheating in a susceptor by microwaving, wherein the bread-roll is made by baking of a premoulded portion of a dough with the composition according to claims 1-3.

5. Microwavable bread-roll, provided with a susceptor, suitable for the production of a crispy bread-roll with improved crumb-softening properties and with a short-bite, wherein the bread-roll is made of a dough with the composition according to claim 1-3.

6. Use of a dough for the production of a microwavable bread-roll, wherein a bread-roll, made from a dough with the composition according to claim 1-3 is used for the improvement of the crumb-softening properties of the microwaved bread-roll and to obtain a short-bite for the microwaved bread-roll.

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EUROPEAN SEARCH REPORT

Application Number
EP 96 20 3160

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	US 5 145 699 A (DIJKSHOORN JACOBUS ET AL) 8 September 1992 * column 6, line 43 - line 55; claims * * column 8, line 13 - line 16 *	1,2,4-6	A21D2/16 A21D15/02
Y,D	US 4 335 157 A (VARVIL R DOUGLAS) 15 June 1982 * column 3, line 34 - line 46; claims *	1,2,4-6	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6) A21D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	5 February 1997	Coucke, A

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
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